Terms of Reference
for the April, 2012 Review of
the NWFSC Southern California Shelf Rockfish Hook and Line Survey

- The overall goal of this review is to evaluate whether the design, protocols, and analytical methods developed for the NWFSC's hook and line survey are suitable for achieving the survey's objectives. The survey's primary objective is to generate information for use in stock assessments of structure-associated rockfish, particularly those species which are poorly sampled by trawl gear used in coast-wide surveys. Such information includes fishery-independent indices of abundance as well as biological data on size, age and maturity.

- Review recent literature (to be provided as background materials) to become familiar with the key species and the primary science and management issues within the Pacific Fishery Management Council (PFMC) umbrella for groundfish in general and structure-associated shelf rockfish in particular.

- Evaluate the suitability of the survey sampling design. Specifically, is the design appropriate for generating abundance indices for shelf rockfish species?
  - Comment on the benefits and drawbacks of the current fixed-site design. Are there benefits to replace or modify the survey's existing fixed-site design with one that includes a random component? If so, do the benefits outweigh the drawbacks associated with disrupting the continuity of the survey's current 8-year time series?

- Evaluate the appropriateness of the gear used during the hook and line survey: rod and reel, mainline, gangion specifications, terminal tackle specifications, etc.

- Evaluate the fishing and biological sampling protocols used during the hook and line survey

- Evaluate the methods and assumptions used to analyze the survey data as well as the associated uncertainty of the abundance estimates.

- Evaluate the utility of hook and line survey data for species encountered consistently at a subset of sites, but for which the survey's coverage may be near the margins of their range (e.g., copper rockfish, widow rockfish, yellowtail rockfish) and other species we encounter episodically in each survey year (e.g, chilipepper). Identify modifications to the survey's design, protocols, or analyses which may improve the utility of survey data for stock assessments of additional species.

- Potential survey expansion and other possible enhancements or modifications to the survey which could lead to additional objectives
  - Does the current design lend itself to expansion?
  - Evaluate whether expanding the survey's sampling area would yield information useful for the assessment of structure associated rockfish

- What are the scientific benefits and drawbacks of expanding the survey into adjacent areas currently not included in the survey area such as north of Pt. Conception or into the Cowcod Conservation Areas?
- Would the methods used by this survey be effective for collecting data and generating abundance indices for other structure-associated rockfish with high commercial or recreational importance elsewhere along the coast (e.g., yelloweye rockfish off the WA or OR coast?)

- Final panel report
  - The report will be divided into sections corresponding to design, protocols, analysis, and survey expansion. Each section should contain the reviewers' understanding of the survey's objectives for that component, followed by analysis and commentary, strengths/weaknesses, and recommended changes/modifications (if any). We also request a prioritization of recommended changes and an evaluation of the potential repercussions if the recommendations cannot be implemented due to budget constraints.